REED

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USA
1-877-742-TEST (8378)

Model LM-8000

4-in-1 Pocket
Thermo-Anemometer,
Hygrometer,
Thermometer &
Illuminometer

Instruction Manual

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Table of Contents

Features....2-3

Specifications....3-4

Instrument Description....5

Measuring Procedures....5-6

Air Velocity Measurement....5

Temperature Measurement (Thermocouple)....5-6

Relative Humidity Measurement....6

Light Measurements....6

Additional Functions....7

Hold Function....7

Data Record Function....7

Auto Power Off....7

Battery Replacement....8

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Features

- 4-in-1 professional measuring instrument: Anemometer, Hygrometer, Thermometer, and Light meter
- Tiny bone shape with lightweight and small size case design are suitable for handling with one hand
- Wristlet design provides extra protection to the instrument especially for user one hand operation
- Low-friction ball bearing mounted wheel design provides high accuracy at high and low air velocity

- Exclusive photo diode and color correction filter light sensor, spectrum meets C.I.E. photopic
- High precision thin-film capacitance humidity sensor with fast response to the humidity changes
- Standard type K (NiCr-NiAl) thermocouple input jack suitable for all kinds of type K probe
- Built-in microprocessor circuit assures excellent performance and accuracy
- Concise and compact buttons arrangement, easy operation
- Memorize the maximum and minimum value with recall
- °C/°F selectable by pressing button on the front panel
- Lux/Feet-candle selectable by pressing button on the front panel
- Zero button design makes light meter calibration
- Hold function to freeze the current reading value

Specifications

General Specifications

Display	8 mm LCD display
Measurement	Anemometer, Humidity, Temperature & Light
Operating Humidity	Max. 80% RH.
Operating Temp.	0 to 50°C (32 to 122°F)
Over Input Display	Indication of "- - - -"
Power Supply	006P DC 9V battery (Heavy-duty type)
Power Consumption	Approx. DC 6.2 mA
Weight	160g (battery included)
Dimensions	156 H x 60 W x 33 D mm (6.14 x 2.36 x 1.29")

Optional Accessories:

Model CA-52A Carrying Case. Temperature probes: **Model LS-109** Surface Probe: Ribbon style probe with a maximum temperature of 400°C. **Model LS-139** Surface Probe: Spring loaded probe is ideal for all high temperature applications. **Model LS-104** Right Angle Surface Probe: Unique right angle design allows temperature of hard to reach areas to be taken. **Model LS-103** Air/Gas Probe: Perforated shield permits fast response while providing element protection. **Model LS-107** General Purpose Probe: Used to measure both air and liquids, but is recommended for immersion applications. **Model LS-134A** Needle Tip Probe: Medium gauge hypodermic needle tip, used to measure softer food stuffs, rubber and solids.

Electrical Specifications (23 ± 5°C)

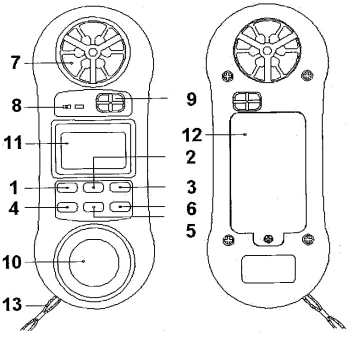
Measurement		Range	Resolution
Air velocity	ft/min	80 to 5910 ft/min	1 ft/min
	m/s	0.4 to 30.0 m/s	0.1 m/s
	km/h	1.4 to 108.0 km/h	0.1 km/h
	MPH	0.9 to 67.0 mile/h	0.1 MPH
	knots	0.8 to 58.3 knots	0.1 knots
	Temperature (thermister)	32 to 122°F	0.1°F
		0 to 50°C	0.1°C
Humidity	% RH	10 to 95 %RH	0.1 %RH
	Temperature (thermister)	32 to 122°F	0.1°F
		0 to 50°C	0.1°C
Light *auto range	Lux	0 to 2,200 Lux	1 Lux
		1,800 to 20,000 Lux	10 Lux
	Ft-cd	0 to 204.0 Ft-cd	0.1 Ft-cd
		170 to 2,000 Ft-cd	1 Ft-cd
Temperature (Type K)		-148 to 2372°F	0.1°F
		-100 to 1300°C	0.1°C

Measurement	Range	Accuracy
Air velocity	80 to 5910 ft/min	≦ 20 m/s : ± 3% F.S. > 20 m/s : ± 4% F.S.
	0.4 to 30.0 m/s	
	1.4 to 108.0 km/h	
	0.9 to 67.0 mile/h	
	0.8 to 58.3 knots	
	32 to 122°F	± 2.5°F
	0 to 50°C	± 1.2°C
Humidity	10 to 95 %RH	< 70% RH : ± 4 %RH; ≧70% RH : ± (4%rdg + 1.2 %RH)
	32 to 122°F	± 2.5°F
	0 to 50°C	± 1.2°C
Light	0 to 20,000 Lux	± 5% rdg ± 8 dgt
	0 to 2,000 Ft-cd	
Temperature (Type K)	-148 to 2372°F	± (1% rdg + 2°F)
	-100 to 1300°C	± (1% rdg + 1°C)

ft/min = feet per minute
m/s = meters per second
km/h = kilometers per hour
MPH = miles per hour
knots = nautical miles per hour
Ft-cd = foot candle

Instrument Description

1 - Power Button
2 - Hold Button
3 - Max/Min Button
4 - Unit/Zero Button
5 - °C/°F Button & Lux/Ft-cd Button
6 - Function Button
7 - Air Flow Sensor
8 - Thermocouple Input Socket
9 - R.H. Sensor
10 - Light Sensor
11 - LCD display
12 - Battery Compartment/Cover
13 - Wristlet



Measuring Procedures

Air Velocity Measurement

1) Power on the instrument by pressing the “Power Button” (#1, above).
2) Select the Anemometer function by pressing “Function Button” (#6, above).
3) Press the “Unit/Zero Button” (4, above) to select unit that you want and then face the “Air Flow Sensor” (7, above) to the source of wind.
4) Allow time for the reading to become stable and note the value indicated. From a practical point of view the velocity may fluctuate.

Temperature Measurement (Thermocouple)

1) Power on the instrument by pressing the “Power Button” (#1, above).
2) Plug a type K thermocouple probe in the “Thermocouple Input Socket” (#8, above).
3) Select the Temperature function by pressing “Function Button” (#6, above).
4) Contact the Thermocouple Sensor Head with the object being measured and the reading value will be displayed on the LCD display.

Measuring Consideration of Temperature Measurement (Thermocouple)

- Make sure the polarity is correct when you plug a thermocouple probe in the Temperature Input Socket (#8, above).
- The temperature difference between thermocouple probe and thermometer will cause an inaccurate measuring result. Therefore, for the best measuring and accuracy performance, whenever changing a probe or plugging in a new probe, thermal equivalence between the probe plug and meter's input socket is required. The thermal equivalent procedure may take few minutes and only needs to be done when the probe has been exposed to an ambient temperature different from the meter.

Humidity & Ambient Temperature Measurement

1) Power on the instrument by pressing the "Power Button" (#1, page 5).
2) Select the Relative Humidity function by pressing "Function Button" (#6, page 5).
3) Meanwhile the reading value of relative humidity and temperature will be displayed on the LCD display.
4) When the meter is applied in a new environment, it will take a few minutes to reach a stable condition.

Light Measurement

1) Power on the instrument by pressing the "Power Button" (#1, page 5).
2) Select the Light Measurement function by pressing the "Function Button" (#6, page 5) until the light value is displayed. The light display digits are oriented 180° from the other function displays for easy exposure and output reading of the light sensor.
3) Press the "Lux/Ft-cd Button" (#5, page 5) to select measuring unit "Lux" or "Ft-cd".

Zero Offset Adjustment of Light Function

- For best results you should zero the light sensor prior to use in a dark environment. To achieve this, place the light sensor end of the meter under a desktop or flat surface to block any light. Press the "Unit/Zero Button" (#4, page 5) setting the meter indication to zero.
- The zero point can drift due to environment temperatures, battery power, as well as various other reasons. It is recommended that the zero be checked frequently using the above procedure.

Additional Functions

Hold Function

Pressing the “Hold Button” (#2, page 5) will freeze the current value with a “HOLD” symbol on the display. Press again to release the hold function.

Data Record Function

1. The Data Record function records & displays the maximum and minimum reading values. Start the Data Record function by pressing the “Max./Min. Button” (#3, page 5) once. There will be a “REC” symbol on the display.
2. With the REC symbol on the display:
   (a) Press the “ Max./Min. Button “ (#3, page 5) once and the “Max” symbol along with the maximum value will appear on the display.
   (b) Press the “Max./Min. Button” again, the “Min” symbol along with the minimum value will appear on the display.
   (c) To exit the memory record function, press the “Max./Min. Button” continuously for at least 2 seconds. The display will revert to the current reading.
   (d) To clear the Max./Min. value recorded by pressing the “Hold Button” (#2, page 5) once. The previously recorded Max./Min. value will be lost and then revert to the REC. function continuing to record.

Auto Power Off

In order to prolong the battery life, the instrument has “Auto Power Off” function. The meter will switch off automatically if no buttons are pressed for around 10 minutes.

Battery Replacement

1. When the left corner of the LCD display shows the low battery symbol "[battery]", this indicates that replacement of the battery is then needed. *However specification measurements could still be taken for another few hours before the meter becomes inaccurate.*
2. Open the Battery Cover (#8, page 4) at the back of the meter and remove the battery.
3. Replace with a 9V battery (alkaline or heavy-duty type) and reinstall the cover.

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Notes

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